

Hawke's Bay LiDAR Index Tiles (2020)

Title

Hawke's Bay LiDAR Index Tiles (2020)

Creator

Toitū Te Whenua Land Information New Zealand

Date

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Description

This layer contains the index tiles for LiDAR data in the Hawke's Bay region and includes Napier, Hastings, Wairoa, Waipawa, Waipukurau, Māhia and the surrounding area captured in 2020. - The DEM is available as layer [Hawke's Bay LiDAR 1m DEM (2020)](<https://data.linz.govt.nz/layer/106487/>) - The DSM is available as layer [Hawke's Bay LiDAR 1m DSM (2020)](<https://data.linz.govt.nz/layer/106488/>) - The LAS point cloud and vendor project reports are available from [OpenTopography] (<https://portal.opentopography.org/datasets?loc=New%20Zealand>) LiDAR was captured for the 5 Hawke's Bay Councils (Wairoa District Council, Hastings District Council, Napier City Council, Central Hawke's Bay District Council and Hawke's Bay Regional Council) by iXblue Ltd from 11 November 2020 to 15 December 2020. The project was managed by the Regional Council. The dataset was generated by iXblue and their subcontractors. Data management and distribution is by Toitū Te Whenua Land Information New Zealand. Data comprises: - DEM: tif or asc tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout - DSM: tif or asc tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout - Point cloud: las tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout Pulse density specification is at a minimum of 8 pulses/square metre. Vertical Accuracy Specification is +/- 0.2m (95%) Horizontal Accuracy Specification is +/- 1.0m (95%) Vertical datum is NZVD2016.

Source

Data Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft from 11 November 2020 to 6 December 2020, using a Leica TerrainMapper-LN LiDAR system. Survey Specification: - Scanner: Leica TerrainMapper-LN - Flying height: 1,950 m AGL - Scan angle: 20 degrees - Pulse rate: 1,500,000 Hz - Swath overlap: 20% - Swath points per M²: 8.9 Data Processing: Leica Geosystems HxMap is used for the Lidar Geo-Positioning workflow. Once the accepted geo-positioning lidar dataset is completed, TerraScan by Terrasolid is utilised for subsequent processing. Base Station: GNSS base stations located at Napier Airport A custom deformation grid was used to apply the planimetric shift to transform the data to project datum, NZTM2000 based on NZGD2000 (20180701). The grid also applies to New Zealand QuasiGeoid 2016 (NZGeoid2016), to reduce the Lidar elevations to the New Zealand Vertical Datum 2016 (NZVD2016). Ground Control Points are used to align the LiDAR survey with the required geodetic and vertical datum of the project. A total of 247 locations were surveyed. 125 of the locations were surveyed as Control points and 123 were surveyed for check site geometric accuracy validation. A combination of Smartfix, Faster Static and RTK GNSS surveying methodologies were used for the surveying. The geopositioning phase of the project is where the raw LiDAR sensor measurements and sensor trajectory data is processed into a set of point clouds for each flightline. Leica Geosystems HxMap software was used for this and subsequent flightline optimisation. This involves refining the LiDAR sensor calibration through comparison and adjustment of fore and aft viewed points within a flightline as well as between overlapping flightlines. Please refer to the dataset report for point cloud spatial accuracy check statistics. The point cloud classification was achieved using a mix of automatic classification algorithms and manual classification, and includes the classification of overlap points, utilising TerraScan. All product deliverables supplied in terms of NZTM map projection and NZVD2016 vertical datum. Classification of the point cloud followed the classifications scheme below: 1- Unclassified 2 - Ground 3 - Low Vegetation 4 - Medium Vegetation 5 - High Vegetation 6 - Buildings 7 - Low Noise 9 - Water 17 - Bridge deck 18 - High Noise The classification was undertaken in accord with the project specification (Toitū Te Whenua Land Information New Zealand, 2020, PGF Version: New Zealand National Aerial LiDAR Base Specification, January 2020). The raster DEM and DSM have grid cell size of 1m. The DEM was created using linear interpolation of a TIN created from the Ground class points and hydro-flattening features. The DSM was created using points of return type, first, first of many and only and excluding Noise and Water class points. The maximum value binning method was applied and where gaps existed in the model these cells

were populated with hydro-flattened DEM cell values Hydro-flattening has been performed on the DEM with the incorporation of hydro-flattening features into DEM where islands are 5,000 sq m or larger, ponds and lakes are 10,000 sq m or larger and rivers are ≥ 30 m nominal width. These features are used in the creation of the DEM to reduce the presence of artifacts in the DEM where the point cloud points alone aren't sufficient to model the landscape. For work where the data is to be used for detailed hydrological modelling hydro-enforcement and enhancement may be required. The deliverables to LINZ were: 1m gridded bare earth digital elevation model (DEM) 1m gridded digital surface model (DSM) Classified point cloud

Coverage

-40.03639537067946 176.49654396384983 -38.790574704233784 177.9334271246998

Identifier

<https://data.linz.govt.nz/layer/106495-hawkes-bay-lidar-index-tiles-2020/>

Type

vector

Language

eng

Subject

New Zealand

Subject

elevation